

# Molecular Cousins Discovered on Titan

Infrared observations with the TEXES instrument at IRTF (bottom right) have revealed the presence of the propadiene molecule (upper right) on Titan, which has evaded detection for 20 years – despite searches by the Infrared Space Observatory and Cassini.

Propadiene is an isomer of propyne (bottom left) – though both molecules have the same number of carbon and hydrogen atoms, their different structures give rise to different chemistries – we find that there is about one-tenth as much propadiene as there is propyne in Titan's middle atmosphere.

A detailed comparison of the amount of each molecule on Titan can help reveal the available hydrogen in its atmosphere and promote a better understanding of the chemistry of Saturn's largest moon.

